November 13, 2015

The Honorable Mary Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

(Comment submitted electronically, Reference: INVESTPLAN2015-WS)

RE: Cap-and-Trade Auction Proceeds, Second Investment Plan

Dear Chair Nichols,

The Low Carbon Fuels Coalition ("LCFC") appreciates the opportunity to provide comments regarding the Air Resources Board's ("ARB"), Cap-and-Trade Auction Proceeds Second Investment Plan (the "Second Investment Plan").

The LCFC is a technology-neutral non-profit association of low carbon fuel companies. The LCFC includes producers, developers and retailers of renewable diesel, biodiesel, advanced ethanol, renewable natural gas, hydrogen, waste-derived jet and diesel fuels, and drop in renewable gasoline. The two founding goals of the LCFC were to build policy consensus across the full spectrum of the low carbon fuels industry, and to support the expansion of low carbon fuel policies that reduce greenhouse gas ("GHG") emissions.

At the outset, I would like to emphasize the LCFC's unwavering support for California's innovative and robust low carbon fuel policies including the Low Carbon Fuel Standard ("LCFS"), Cap-and-Trade, Greenhouse Gas Reduction Fund ("GGRF"), and the California Climate Investments. I am pleased to confirm that this policy framework is a powerful catalyst driving low carbon fuel production and demand locally, nationally, and globally. The California Climate Investments are motivating the world's most innovative low carbon fuels companies to consider investing and siting facilities in California. This comment provides recommendations about how to best to leverage the GGRF to maximize GHG reductions, increase production from existing California low carbon fuel facilities, expand private investment in future low carbon fuel production in California, reduce the costs of low carbon fuels, and provide health and economic benefits to disadvantaged communities ("DAC's").

The LCFC's membership includes DuPont Industrial Biosciences (a leader in cellulosic ethanol), AGRON BioEnergy (a California producer of low NOx biodiesel), Propel Fuels (a leading retailer of E85 and renewable diesel fuel), REG (the nation's largest biodiesel producer with renewable diesel and biochemical facilities), Promus Energy (developer of renewable natural gas from dairy waste projects), SeQuential Biofuels (an Oregon based biodiesel producer and retailer of low carbon fuels), Iogen (a producer of ethanol from agricultural residues with commercial production starting in Brazil), California Ethanol and Power (developer of a sugarcane to ethanol facility in the Imperial Valley), the Earth Partners (developer of land restoring biofuel projects), Community Fuels (biodiesel producer in the Port of Stockton), Fulcrum BioEnergy (developer of waste derived diesel and jet fuel projects), Pearson Fuels (a leading developer of E85 and hydrogen stations in California), GHI Energy (a wholesale supplier of renewable natural gas), and Cool Planet Energy Systems (a producer of renewable gasoline, biochar, and biochemicals).

Strategic Portfolio of GHG Reducing Programs

We support ARB's strategy to invest GGRF revenues on a diversified basis to achieve the maximum feasible GHG reductions as cost-effectively as possible. We are supportive of the references in the Second Investment Plan to the establishment of incentives for the in-state production of low carbon intensity fuels.

ARB's decision to invest in low carbon fuels production is fiscally and environmentally prudent because:

- The transportation sector is the largest source of GHG emissions and is the largest source of planned GHG reductions achieved primarily through Cap-and-Trade, and the LCFS.[1]
- Biofuels delivered 87% of the GHG reductions in the LCFS between 2011-2014[2] and will continue to deliver the overwhelming majority of reductions for the next

[1] AB 32 Report, http://www.arb.ca.gov/cc/jlbcreports/jan2014ab-32-report.pdf at p. 40 (last viewed August 21, 2015).
[2] Yeh, Sonia, Julie Witcover, James Bushnell (2015) Status Review of California's Low Carbon Fuel Standard - April 2015 Issue (Revised Version). Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-
[2] Yeh, Sonia, Julie Witcover, James Bushnell (2015) Status Review of California's Low Carbon Fuel Standard - April 2015 Issue (Revised Version). Institute of Transportation Studies, University of California, Davis, Research Report UCD-ITS-
RR-15-07, at p. 2.

five years. This is well illustrated by the comprehensive compliance scenario analysis completed by ARB pursuant to the LCFS re-adoption process as summarized by Table B-18 of the Initial Statement of Reasons.[3]

Table B-18. Illustrative California Reformulated Gasoline Oxygenates and Substitute Fuels through 2020

Fuel	Units	2014	2015	2016	2017	2018	2019	2020
Corn & Related Ethanol	mm gal	1,400	1,350	1,250	1,175	1,000	925	875
Cane and Sugar Ethanol	mm gal	120	170	240	290	410	460	510
Cellulosic Ethanol	mm gal	0	0	5	15	50	75	100
Renewable Gasoline	mm gal	0	0	0	0	5	15	25
Hydrogen	mm gal GGE	0.03	0.4	1	2	4	5	7
Electricity for LDVs	mm gal GGE	9	14	19	24	31	40	51
Notes: mm gal = million gallons; GGE = gasoline gallon equivalent								

- Liquid and gaseous low carbon fuels can be stored, blended and distributed via the existing petroleum distribution network and utilized in existing gasoline, diesel, and natural gas powered vehicles.
- These fuels and vehicles are the only technologies that can be immediately deployed to deliver substantial GHG reductions to California's rural and urban disadvantaged communities.
- California's goal of cutting petroleum use in half by 2030 would be facilitated by at least a doubling in the use of low carbon fuels including biofuels and renewable natural gas.[4]

[3] Air Resources Board, Low Carbon Fuel Standard Initial Statement of Reasons, Appendix B (Development of Illustrative Compliance Scenarios and Evaluation of Potential Compliance Curves), at p. B-36, http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs15appb.pdf (last viewed August 21, 2015).

[4] Air Resources Board, California's 2030 Climate Commitments: Cutting Petroleum Use in Half by 2030, http://www.arb.ca.gov/newsrel/petroleum_reductions.pdf (last viewed August 21, 2015).

Summary of Recommended Program Structure

The Low Carbon Fuels Coalition recommends that ARB establish and administer a new incentive program, the California Climate Investment Fuel Program (CCIFP). The CCIFP will immediately expand the utilization of existing California low carbon fuel production facilities, and over the longer term will support the establishment of new facilities to significantly expand production of low carbon fuels in California. The CCIFP will increase the supply of fuels available to meet LCFS requirements, and will bring new technology, capital and jobs to California.

I have attached a summary of the recommended CCIFP program structure to this letter. In essence, the CCIFP would provide a price floor to qualified existing California facilities and new California producers for new gallons produced within the scope of the program. It is a technology neutral structure that does not require state investment in capital expenditures but instead enables project developers to secure private debt and equity investment as well as federal loan guarantees. This innovative structure has the strong support of our membership, and is attracting support from low carbon fuel producers in the US and abroad. We believe the CCIFP is well-designed to meet ARB's objectives. While we have proposed an overall program structure, we would welcome the opportunity to work with ARB staff to optimize the program.

Support for Low Carbon Fuel Infrastructure

In addition to the CCIFP, the LCFC supports targeted expenditures to develop dedicated low carbon fuel infrastructure in California. Existing incumbent market participants have allowed low carbon fuels to attain only limited and expensive access to California's bulk distribution network. Bulk fuel is distributed by "racks" located at "terminals". These racks dispense wholesale bulk fuel into fuel tankers that deliver the fuel to retail outlets and bulk customers. As a result of severely limited rack access, low carbon fuel producers are forced to heavily discount the fuels they sell to obtain market access.

The importance of infrastructure is well-recognized in the Second Investment Plan:

> *Funding is also needed for the alternative renewable fuels and fueling infrastructure to support these advanced technologies. Investments in low-carbon intensive fuels here in California can reduce GHG emissions, provide in-State economic opportunities, and help grow the State's clean fuels market.(…)*[5]

[5] Second Investment Plan at p. 32.

Consistent with the identified need, the Plan includes the following draft investment concept:

> *Support electric vehicle and equipment charging, hydrogen and renewable fueling infrastructure, including in multi-unit dwellings, retail locations, ports, truck stops, and distribution centers.*[6]

Specific to the low carbon fuels sector, the critical infrastructure opportunity is to provide access to blending racks at a reasonable cost per gallon. To the extent that reasonable access to fuel blending racks at terminals is established for low carbon fuels, significant cost savings will be delivered to California consumers. We are confident that GGRF investments in this area will provide almost immediate returns on investment, and enable more rapid de-carbonization of the transportation sector. We therefore support AB 1176, a pending bill summarized by the Legislative Counsel as follows:

> *This bill would establish the Advanced Low-Carbon Diesel Fuels Access Program, to be administered by the commission, in consultation with the state board, for the purpose of reducing the greenhouse gas emissions of diesel motor vehicles by providing capital assistance for projects that expand advanced low-carbon diesel fueling infrastructure in communities that are disproportionately impacted by environmental hazards and additionally where the greatest air quality impacts can be identified.*[7]

The LCFC recommends that ARB consider integrating the type of infrastructure spending proposed by AB 1176 into its Second Investment Plan. We would welcome the opportunity to discuss with ARB which specific investments in fuel rack blending infrastructure would yield the greatest impact in GHG reductions and cost savings.

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[6] Id. at p. 33.

[7] Assembly Bill No. 1176, 2015-2016 California Legislative Session, Introduced by Assembly Member Henry Perea, amended text as reported by California Legislative Information at http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1176 , last viewed November 13, 2015.

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Conclusion

We appreciate the ARB's inclusion of low carbon fuels production and infrastructure expansion within the scope of its Second Investment Plan. We look forward to engagement with ARB throughout the process to ensure that any GGRF funds directed to the low carbon fuels sector are invested wisely and yield the highest possible dividends in terms of GHG reduction, other air quality benefits, petroleum reduction, benefits to Disadvantaged Communities, and the expansion of California's clean economy.

Thank you for your consideration of this comment.

Sincerely,

Graham Noyes
Executive Director
Low Carbon Fuels Coalition

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CCIFP to Maximize Low Carbon Fuel Production and GHG Reduction in California

Program Recommendation:

The Low Carbon Fuels Coalition recommends that California's Air Resources Board (ARB) establish and administer a new incentive program to substantially expand the in-State production of low carbon fuels. The proposed California Climate Investment Fuel Program (CCIFP) will expand the utilization of existing California low carbon fuel production facilities, and attract new facilities to California. The CCIFP will increase the supply of fuels available to meet Low Carbon Fuel Standard (LCFS) requirements, and will bring new technology, capital and jobs to California.

The lack of long-term stable pricing is the fundamental challenge to expanding supply of low carbon fuels. The CCIFP will provide a guaranteed all-in price floor for a designated number of gallons for a specified term. The guaranteed floor price will encompass market price for the fuel plus federal RIN value (from the federal Renewable Fuel Standard or RFS) plus LCFS credit price plus any other incentives that may be applicable. The CCIFP has been designed with the assistance of the biofuel industry, investors, and project finance experts to enable the development of facilities at the lowest possible program cost. It has also been designed consistent with California's Greenhouse Gas Reduction Fund (GGRF) priorities to:

1. Reduce greenhouse gas (GHG) emissions and other climate pollutants by supporting the development and use of low carbon fuels;
2. Benefit California's most disadvantaged communities by creating jobs in the manufacturing sector and by reducing health risks through the reduction of criteria pollutants and toxic air contaminants;
3. Increase rural participation by establishing reliable new markets for agricultural residues, animal rendering by-products, and excess fuels from forests; and,
4. Maximize co-benefits to the public health, environment and the economy by reducing diesel particulates, enabling sustainable agriculture, and creating new family wage skilled California jobs.

Program Summary:

The initial stage of the CCIFP will expand the utilization of existing California facilities. California producers currently supply less than 20% of the low carbon fuels that the state requires for LCFS compliance. Existing facilities have tens of millions of gallons of underutilized production capacity. The quickest and most cost-effective opportunity to increase California's low carbon fuel supply is to expand utilization of existing facilities. With the help of the CCIFP, existing facilities can immediately ramp production, and

keep dollars and jobs in the state. The CCIFP will guarantee qualified in-state producers a floor price for a fixed quantity of production expansion. Plants will bid into a reverse auction a proposed minimum price floor to increase quarterly production relative to a 2014 baseline. ARB will award price guarantees for 1-2 year terms based on the lowest qualifying bids adjusted by other criteria including benefits to disadvantaged and rural communities, the environment, public health and other factors determined by ARB. All unutilized funds will remain in the CCIFP fund and will become unburdened to the extent not used in a particular quarter.

The next stage of the CCFIP will support the establishment of new advanced biofuel production facilities in California with the first new plants coming on line in 2018. The CCIFP will utilize the same reverse auction format as the initial stage but will enable the financing of new facilities by providing long-term all-in price guarantees with terms of up to fifteen years. Existing plants will be able to bid both capacity expansions and improvements that result in significant carbon intensity reductions into the long-term program. Awards will result in contracts backed by appropriated GGRF funds for the CCIFP and the full faith and credit of the state. The reverse auctions will proceed annually to enable ARB to gain experience with the program, and to strictly control the amount of GGRF funds that are burdened by contracts. Since the program structure is in the form of a guarantee, funds will only be expended when necessary to compensate for weak market conditions.

Target Outcomes:

1. Maximize and optimize utilization of existing California low carbon fuel production facilities.
2. Secure reliable and predictable new low carbon fuel production in California.
3. Leverage LCFS, GGRF and other existing programs to deliver the maximum possible GHG reduction per dollar invested.
4. Maximize co-benefits to economy, environment, and rural and disadvantaged communities.
5. Attract new facilities along with technology and corresponding jobs and private investment to California.
6. Utilize and upgrade existing production assets to protect and expand California jobs and private investment.
7. Minimize actual cost of program by structuring as a price guarantee that is only paid out when pricing drops below specified floor.

Key Attributes of Program:

1. Only existing low carbon fuel production facilities or planned facilities that companies propose to site in California are eligible to participate.
2. Competitive reverse auction process to determine participation based on proposed minimum price, as well as sustainability, developer and technological readiness, feedstock and co-benefits like wildfire risk reduction and waste utilization, existing asset utilization, job creation and preservation, and benefits to disadvantaged and rural communities.
3. Proposed projects will be evaluated in three separate categories depending on whether the low carbon fuel will provide supply for the gasoline sector, diesel sector, or natural gas vehicle sector.
4. The minimum carbon intensity (CI) reduction requirement for new facilities will be established annually by ARB so a proposed facility would have to have a specified CI to qualify.
5. Successful developer/producer bidders will receive a fully loaded off-take price guarantee for a designated number of gallons per year. The price guarantee includes market price, RIN value from Renewable Fuel Standard (RFS), Low Carbon Fuel Standard (LCFS) credit, and any other payment or credit received for fuel.

Experience with Contracts for Difference:

The CCIFP is a modification of the Contracts for Difference incentive structure. Contracts for Difference (CfDs) are incentives currently used in the UK to support renewable electricity generation. In the past decade, the UK transitioned from a renewable portfolio standard (RPS) approach to using CfDs as the predominant policy measure to expand renewable energy supply. The UK undertook this transition based primarily on cost considerations, determining that more renewable energy could be purchased per CfD dollar than through the RPS structure.

The UK CfD works in the following way:

- The government sets a maximum "strike price", on a $/MWh basis, for each renewable energy technology, based on the average costs of power production from that technology and accounting for the needed internal rate of return (IRR) for an attractive project. The strike price becomes the maximum guaranteed price received for each MWh of electricity produced over the lifetime of a renewable energy project (in the UK the lifetime is 8-10 years).

- The government sets an annual budget and holds annual CfD auctions. Project developers submit bids into the auction that are considered on a competitive basis by the government, based on proposed strike price (not to exceed the maximum determined by the government), project feasibility, project readiness, sustainability considerations, etc.
- Based on the auction, the government awards winning projects CfDs in order of competitiveness until the funding available is exhausted. The government pays winning projects the difference between the project's awarded strike price and the wholesale market price for electricity. If the market price exceeds the strike price, the power producer pays back the difference back to the government. Over the life of the CfD, the project is guaranteed the agreed strike price, no more, no less.
- Not subject to the whims of power markets and fluctuating credit prices, projects with CfDs are highly attractive to developers and investors because price risk is minimized. The keys to ensuring an effective scheme are appropriately setting the maximum strike price and running highly competitive auctions.

Recommended Appropriation:

It is recommended that the CCIFP receive the following appropriations:

1. CCIFP to receive $75M in GGRF funding FY 2015-2016.
2. CCIFP to receive $125M in GGRF funding FY 2016-2017.
3. CCIFP to receive 10% continuous appropriation from GGRF for fifteen year period (FY 2017-2018, through 2031-2032) to support long-term project development.

Conclusion

The Low Carbon Fuels Coalition looks forward to discussions with the Air Resources Board and other stakeholders regarding the optimization of this proposed incentive to support the in-State production of low carbon fuels.